



NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

Editor - Captain F. W. Farrar. (MC). U.S.N.

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(Not Restricted)

Report on Treatment in Typhoid Fever with Sulfathiazole and Penicillin:

Because of the results of Bigger's researches on the combined action of sulfathiazole and penicillin on E. typhosa (see Bumed News Letter of 10 May 1946), McSweeney, Medical Superintendent of the Cork Street Fever Hospital, Dublin, decided to treat with both therapeutic agents those patients admitted to the hospital with typhoid fever of such severity that their survival was not considered likely.

During a period of 11 months, six such patients were treated. All recovered.

The first case was disappointing because the blood cultures remained persistently positive after what was considered intensive penicillin and sulfonamide therapy. It was concluded that the reason for this was that the therapeutic agents were not present in the blood in sufficient quantity to sterilize it. Even with low blood levels it was evident that the toxemia was considerably lessened, and there were no complications due to ulceration.

The next five patients treated received two four-day courses of penicillin and sulfathiazole. Each course consisted of 10,000,000 units of penicillin given intramuscularly in doses of 200,000 units every 2 hours, and concurrently about 34 grams of sulfathiazole given intravenously for the first dose of 2 grams (sodium sulfathiazole) and followed by 1-gram doses orally every 3 hours. The second course of combined therapy was started from 2 to several days following completion of the first course.

The most striking results in the five cases given the high dosages were the early disappearance of toxemia, the rapid subsidence of pyrexia (which normally would have persisted for weeks), and the rapid return of formed stools.

No general or local adverse effects of the disease occurred after the end of the second course of intensive treatment, and the patients were bright, cheerful, and eager for solid food.

The system of dosage followed in these cases was arbitrary and may require modification with further experience. (From a study of the case histories as given, it appears that it might be advantageous to begin treatment earlier and to continue the first course to a point where a second course would not likely be necessary - Ed.)

The author believes that there is strong reason for extending this method of treatment to chronic carriers of typhoid fever bacilli, and states that investigations along this line are in progress in Ireland. (Lancet, July 27, '46)

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Re the Use of Fluorides in Dentistry: In view of the increasing interest in the use of fluorides in dentistry the following information on that subject is reprinted from the Report of the Seventeenth Annual Meeting of the American Dental Association Council on Dental Therapeutics.

A large number of products which contain fluorides and are proposed for use to prevent dental caries or to relieve hypersensitive dentin have appeared on the market during the past year. None of these products has been accepted by the Council on Dental Therapeutics, and it is the Council's understanding that very few of them have been granted licenses by the Food and Drug Administration.

Experimentation with fluoride medication by qualified scientific investigators is encouraged by the Council. However, routine dental practice is not the place for such experimentation. The Council has partially supported the work of Knutson and Armstrong on the topical application of fluorides.

The use of fluorides is still largely experimental, and their routine application in any form by dentist or patient should be discouraged at this time, since the mechanism of their action and the full extent of their possible harmful effects are not known.

It appears that fluorine preparations may devitalize pulps if they are sealed in freshly cut dentin. The precise manner and extent to which such preparations may be applied without endangering the vitality of the pulp has not been determined, so far as the Council is aware.

Recently published findings indicate that the addition of sodium fluoride to dentifrices is without beneficial effect.

Evidence adequate to support the rationale of administering fluorides in the form of bone-meal preparations or other pharmaceutical dosage forms is lacking.

The incorporation of fluorides in public water supplies under adequate dental, medical and engineering control is being carried out in a number of cities. A study of the results from this method of making fluorine available to human beings will demonstrate the suitability of the future application of fluorides to community waters. The evidence at the present time indicates a strong possibility of partially controlling dental caries by this method. (Dental Div., BuMed)

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Comparison of Intracutaneous and Subcutaneous Vaccinations Against

Influenza: The value of inactivated influenza virus vaccine has been demonstrated convincingly. The combined Type "A" and "B" influenza vaccine, prepared from chick embryo allantoic fluid, concentrated and eluted from embryonic RBC, given in a single dose of 1 c.c. subcutaneously, was shown to have a striking protective effect in the epidemic of Type "A" influenza in November and December, 1943. The same vaccine proved to have an equally striking protective effect in an outbreak of Type "B" influenza in December, 1945. In addition to field studies, the Red Blood Cell Agglutination-Inhibition test of Hirst has been used by most investigators as an index of the serum antibody response to immunization.

It has been known for a long time that a small intracutaneous inoculation will often yield an immune response similar to that produced by a much larger subcutaneous dose. Intracutaneous immunizations with minute doses of immunizing agents have produced highly satisfactory immune responses with Typhoid Vaccine, Diphtheria Toxoid, and Scarlet Fever Toxin. Because of the expense and difficulty of obtaining large amounts of inactivated influenza virus vaccine, an investigation was undertaken to test the efficacy of intracutaneous influenza vaccination as compared with that of subcutaneous vaccination.

A total of 1953 men attached to the U.S. Naval Training and Distribution Center, Treasure Island, California, took part in this experiment. Study and control groups were set up. The serum antibody response to injected vaccine was studied at two and four weeks following inoculation.

From a study of the results it appears that following a single intracutaneous injection of inactivated influenza virus vaccine, a rise in serum antibody titer occurs which is considerably greater than that following a single subcutaneous injection. This occurred both against the "A" virus and the "B" virus.

Although a direct relationship between the antibodies concerned in the Hirst RBC Agglutination-Inhibition test and those which are concerned in immunity to influenza has never been demonstrated, there is some evidence that is strongly suggestive that such a relationship does exist. This evidence may be summarized as follows: (1) There is a correlation between the RBC Agglutination-Inhibition power of immune serum (either postvaccinal, or convalescent), and the virus-neutralizing power of the same serum as tested by the mouse protection test. This was noted by Hirst in his original article and has been confirmed since. (2) There is a correlation between the RBC Agglutination-Inhibition power of the serum of a person and his susceptibility

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to experimental influenza. Henle et al. demonstrated very clearly, in producing experimental influenza in vaccinated and unvaccinated persons, that there was a direct relationship between the pre-inhalation antibody titer and susceptibility to influenza. (3) There is a correlation between the antibody titer of postvaccinal sera, and the protection against naturally occurring influenza.

Because the workers engaged in this study have shown that a single dose of 0.1 c.c. inactivated influenza virus vaccine injected intracutaneously results in a rapid and considerable rise in the serum antibody titer (reaching a level in one month of several times that obtained by a single dose of 1 c.c. of the same vaccine injected subcutaneously), they conclude that the intracutaneous method should be further studied to determine whether it will give adequate protection against influenza. (Report on Research Proj. X-705 by U.S. Naval Epidemiology Unit #82 - Van Gelder et al.)

Note: Opinions or conclusions contained in this report are those of the authors. They are not to be construed as necessarily reflecting the views or endorsement of the Navy Department. Reference may be made to this article in the same way as to published articles, noting authors, title, source, and project number.

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Some Epidemiological Aspects of Sensitivity to Histoplasmin and Tuberculin: During the past year several reports have shown that there is a close relationship between sensitivity to histoplasmin and pulmonary calcification. Except for these several preliminary studies, little information has been available concerning the major epidemiological characteristics of histoplasmin sensitivity and of its relationship to pulmonary calcification.

In a study begun early in 1945 to establish the major epidemiological characteristics of histoplasmin sensitivity, histoplasmin and tuberculin skin tests and chest x-rays were made on over 17,000 persons in Kansas City, Mo.

The percentage of positive histoplasmin reactors among white persons was found to be slightly higher than among Negroes, higher among males than females, and higher among nonlifetime residents than lifetime residents.

The percentage of positive tuberculin reactors was three times higher among Negroes than among white persons. Very little difference was observed between males and females, and between lifetime and nonlifetime residents.

The frequency of pulmonary calcification was over twice as high among reactors to histoplasmin alone as to tuberculin alone. The frequency of

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calcification among those who reacted to neither test was very low (2.6 per cent). Among those who reacted to either tuberculin or histoplasmin there was a marked increase with age in the occurrence of calcification. (Pub. Health Reps., Aug. 2, '46 - Furcolow and Allen)

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Schistosomiasis Japonica: Four hundred and eighty-one cases of schistosomiasis japonica acquired on Leyte, an island in the Philippines, were studied at an Army general hospital in the United States.

Recurrent epigastric cramps and tenderness were the most frequent complaints on admission, but in almost all cases these had disappeared by the time of discharge.

Repeated stool examinations by more than one method were necessary to demonstrate the eggs of Schistosoma japonicum. A persistent eosinophilia was suggestive but not diagnostic of continued activity of the disease.

On the basis of comparable series, treatment with tartar emetic was found to be much more effective than that with ruadin. Significant toxic reactions with tartar emetic were rare.

It is urged that stool examinations be made repeatedly and by multiple methods on men who have been exposed to this disease so that treatment may be instituted if ova are found. (New England M. J., Aug. 8, '46 - Mason et al.)

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Experimental Study of the Development of Resistance to Streptomycin by Some Bacteria Commonly Found in Urinary Tract Infections: A study has been made of the ability of a number of strains of bacteria commonly found in infections of the urinary tract to develop resistance to streptomycin.

The organisms were isolated from cultures of urine which had been made in the clinical bacteriologic laboratory. Thirteen different strains were studied. They consisted of two strains of Escherichia coli, two of colon-aerogenes intermediates, two of Aerobacter aerogenes, three of Streptococcus fecalis, two of Pseudomonas aeruginosa, and two of Proteus of uncertain species.

The sensitivity to streptomycin was determined by streaking the organisms on a series of nutrient agar plates containing twofold increments of the antibiotic substance. The results agreed with those already reported in the literature for bacteria isolated from urinary tract infections.

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The development of resistance was shown most rapidly by the two strains of Pseudomonas and the three strains of Streptococcus fecalis. Only from three to seven transfers were required to make the strains of Pseudomonas resistant to 1,000 units of streptomycin per cubic centimeter, and between four and seven transfers sufficed to obtain the same result for the strains of Streptococcus fecalis. The two strains of Escherichia coli required between seven and twelve transfers. The Aerobacter aerogenes and colon-aerogenes intermediate strains required between two and seventeen transfers. The strains of Proteus were sensitive to between 3.1 and 6.2 units of streptomycin per cubic centimeter, and from seven to eleven transfers were required to make the organism resistant to a concentration of 1,000 units of streptomycin per cubic centimeter of broth. A different reaction, however, was found when the cultures of Proteus were grown in urine. Several attempts to make these strains of Proteus resistant to 1,000 units of streptomycin per cubic centimeter of urine failed because the organisms died, and each time a new start had to be made from the original culture. Finally the two strains became resistant to 1,000 units of streptomycin per cubic centimeter of urine after twelve and twenty-four transfers, respectively. The explanation for the different behavior of Proteus in broth and in urine is probably that Proteus splits urea and thus increases the pH of the medium to more than 8, which in turn increases the activity of streptomycin.

The significance of this study lies in the fact that all the bacterial strains could be made resistant to a concentration of 1,000 units of streptomycin per cubic centimeter of medium. It appears evident that if an infection of the urinary tract is to be treated with streptomycin, the initial doses should be high in order to control the infection as rapidly as possible. Otherwise, the possibility exists that the bacteria causing the infection may develop increasing resistance to the antibiotic substance. Also, it should be remembered that in the treatment of infections of the urinary tract with streptomycin an attempt should be made to maintain the reaction of the urine as alkaline as possible since the activity of streptomycin increases with elevations in pH.

In an attempt to determine whether the resistant microbes would again become susceptible to streptomycin if cultivated in the absence of this antibiotic, these bacterial strains which had been made resistant to 1,000 units of streptomycin per cubic centimeter were transferred daily in nutrient broth and tested. After twenty-nine daily transfers it was found that the bacteria lost none of their resistance. The clinical deduction to be drawn from this phase of the study is that an infection caused by bacteria which have developed resistance to streptomycin is unlikely to respond to a second treatment after the lapse of a few weeks. (Proc. Staff Meet. Mayo Clinic, July 24, '46 - Knop)

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A Report on Plague Control with DDT and 1080: In the city of Tumbes, Peru, which has a tropical climate, 10,000 inhabitants, the majority of the houses constructed of bamboo or wattle (mud and sticks), and no public water supply system or sewerage, an epizootic of murine plague, followed by a human epidemic, broke out in the last trimester of 1945. Among the epidemiological factors of importance were the intense over-population with Rattus alexandrinus, with a flea-index of 4.5 among the rats (11.3 in the epizootic zone), and the fleas being chiefly Xenopsylla cheopis; an abundance of rat fleas in the rat nests with an average of 5.03 fleas per nest (8.6 in the epizootic zone), practically all X. cheopis; an abundance of free-living fleas on the floors of houses, predominately Ctenocephalus canis, Pulex irritans, and Tunga penetrans; and the presence of X. cheopis on floors, and in the clothing of plague cases. Other important factors in the outbreak were the proximity of the rainy season, which began in December, a temperature fluctuating between 26° C. and 34° C., and a relative humidity between 75 and 94 per cent. The plague epizootic may have begun in July or August, which are not in the plague season, and progressed slowly until the beginning of the plague season at the end of September. A total of 21 foci developed, of which 2 were intense, the first of these being in the Public Market. In these plague foci 27.3 per cent of rats found were plague-infected, as were 56 per cent of the fleas found on these rats or in their nests. In all, 40 cases were involved in the epidemic which was not recognized as due to plague until the middle of November when more than a dozen cases had occurred. All of the cases were bubonic in type. The case fatality rate was 35 per cent.

The only control methods used were DDT in powder form - diluted to 10 per cent in talc or pyrophyllite, and diluted to 5 and 2 per cent in refined wheat flour - followed by the application of sodium fluoroacetate (1080) as a raticide. The DDT was applied first to the floors of all 1,357 houses (containing 3,820 rooms and 7,388 inhabitants), using an average of from 2.5 to 3.0 Gm. of 10 per cent DDT per sq. meter (140 Gm. per house, 50 Gm. per room) to prevent infected fleas from biting the populace. This dusting was carried out over a period of 11 days. The second application, requiring 10 days for completion, was made to the spaces between ceilings and roofs, on the flat roofs, beneath floors, between double walls, etc., using 5 per cent DDT powder. The first method is termed, "surface application," and the second "subsurface application." From 20 December 1945 to 19 January 1946 the application of DDT as above was carried out again. Simultaneously with this re-application of DDT, the raticide "1080" was brought into use. Three types of 1080-poisoned baits were employed: a 1/1000 solution in water, a 5/1,000 mixture in rolled oats, and a similar concentration in small dried cakes. In placing the baits, 1,200 domiciles received a total of 2,086 visits, with 4,608 baits being set out, locating them in both upper and lower parts of the houses, outside as well as inside, and also in rat burrows.

The effectiveness of the application of DDT can be appreciated by: (a) the stopping of the epidemic 4 days after finishing the first application of DDT (one case occurring over a month later was due to the incomplete treatment of a known focus); (b) the 81.6 per cent lowering of the flea infestation of the rats, and the 87.9 per cent diminution in the number of fleas found in rat nests after the first application of DDT. There was a final reduction in the number of fleas in the epizootic foci of over 90 per cent. Rat plague was reduced 75.6 per cent after the first application of DDT, and 100 per cent after the second.

The results from the use of sodium fluoroacetate (1080) were excellent, as could be judged by partial controls. In one district of the city 40.4 rats per 100 baits were killed, and 1.2 rats per house succumbed to the effects of 1080. In other sectors fewer dead rats were found, but the checking of this factor was deficient and irregular. The population was well satisfied with the results of the poisoning.

The application of DDT, followed by poisoning with 1080, promises to be the procedure of choice in the control of epidemics of bubonic plague.

A later paper will present a discussion of the toxicity of 10 per cent DDT for rats (which regularly and carefully lick their fur) in dosages of from 1.0 to 2.0 Gm. of the powder applied to the body surfaces of the rat, and the toxicity of sodium fluoroacetate (1080) for rat fleas which die by secondary poisoning from ingesting the blood of poisoned rats. (Am. J. Pub. Health, Aug. '46 - Macchiavello)

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Effects of Diisopropyl Fluorophosphate ("DFP") on the Normal Eye:

During the past few years many investigators have studied the physiologic and pathologic effects of the fluorophosphates. Of these, the diisopropyl derivative ("DFP") has received most attention. It has been shown to be a powerful inhibitor of cholinesterase and, therefore, has pronounced parasympathomimetic and nicotinic actions. It is much more potent than physostigmine in these respects. In the eye, DFP has been shown to produce prolonged and marked miosis, spasm of the ciliary muscle, false myopia, and decrease in intraocular tension. The ocular effects of DFP far outlast those produced by other known miotic agents. For example, miosis in the rabbit was found to last two days, in the cat from ten days to two months, and in man, from three to nine days (by one observer) and from fourteen to twenty-seven days (by another observer). The spasm of the ciliary muscle in man has been found to last from three to seven days.

Because of the useful potentialities of this long-acting, powerful miotic agent in the treatment of glaucoma, further studies of its ocular pharmacologic

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properties were undertaken. These studies were directed mainly toward investigating the mode of action of DFP, the possibilities of systemic absorption from its local use in the eye and the problem of DFP-atropine antagonism.

In the course of their studies, the authors had opportunity to confirm and extend previous observations of other investigators. These were:

1. DFP locally instilled in the eye in low concentrations will produce prolonged miosis, ciliary spasm, false myopia and decrease in intraocular tension. Quantitative species variations were found to exist, but the effects were most marked and prolonged in man.
2. A 1 per cent solution of DFP will produce a more prompt, pronounced and prolonged miosis than a 5 per cent solution of neostigmine bromide.
3. DFP in the concentrations used has no direct effect on the iris muscle itself since it fails to constrict the totally denervated cat iris. Its effects, therefore, are due entirely to inactivation of cholinesterase.
4. A 0.1 per cent solution of DFP is able to overcome the cycloplegic effect in human eyes of 4 per cent homatropine hydrobromide, and a 0.2 per cent solution of DFP, that of 1 per cent atropine sulfate.
5. DFP was shown to increase the capillary permeability for fluorescein but not for inulin.
6. A slight decrease in the plasma cholinesterase was noted after ocular instillation of DFP, indicating that minimal systemic absorption occurs.
7. No significant difference could be demonstrated between oil and water as a vehicle for DFP for ophthalmic use except that DFP was found to be decidedly more stable in peanut oil than in water. (Arch. Ophthalmol., July '46 Leopold and Comroe)

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Masking of Early Syphilis by Penicillin Therapy in Gonorrhea: Early workers in penicillin therapy for gonorrhea recognized the danger of this treatment as being sufficiently spirocheticidal to alter or mask the usual development and evidences of a syphilitic infection acquired with or prior to the gonococcal infection. More recent experience has tended to confirm this early impression and to point out a sequence of signs and symptoms which may be helpful in the early recognition of dual infections.

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In a recent report, Leifer and Martin recite specific instances in which the progress of an oncoming syphilis probably was influenced by the treatment with penicillin of an intercurrent gonorrhea. These authors mention the occurrence of chills, fever, and malaise developing early in the course of the therapy as a possible indication of dual infection. Buchholtz and Cutler, in an unpublished review of an enormous amount of material on experience with penicillin in venereal disease, are also of the opinion that a febrile reaction to the penicillin therapy of gonorrhea may be considered as strongly indicative of the coexistence of syphilis, either active, latent, or in the stage of incubation.

In the patient treated for gonorrhea with penicillin, a syphilitic infection acquired either before, at the time of the gonorrheal infection, or later, may or may not be appreciably delayed in development, and then run a usual course with the formation of a chancre, or without the appearance of a chancre may be manifested by the presence of generalized lymphadenopathy, or clinical evidence of secondary syphilis or by a positive blood test. Thus, any patient treated for gonorrhea with penicillin must be instructed to have, at the least, monthly blood tests for syphilis for 4 months after receiving the drug.

In the course of treatment of about 1,000 patients with early syphilis, 66 were seen who gave a history of having had penicillin therapy for gonorrhea within the incubation period of syphilis. None of these patients gave a history of a penile ulcer at the time of the course of penicillin treatment for gonorrhea. Eighteen of these men gave a history of a chilly sensation and/or fever accompanying the treatment; 16 remembered no systemic manifestations; and in the others there was no record of reaction.

Treatment of early syphilis with penicillin is accompanied by a Herxheimer reaction in about 90 per cent of all cases, while treatment of gonorrhea with penicillin is very rarely accompanied by fever. According to a personal communication from Dr. Maurice Buchholtz, in the penicillin treatment of over 2,000 patients with simple, acute or chronic gonorrheal urethritis unaccompanied by clinical evidence of syphilis, only 2 or 3 patients were observed to have a febrile reaction which could not be explained on the basis of a toxic reaction to penicillin or to the coexistence of syphilis. Thus, it seems that the occurrence of fever with the penicillin treatment of gonorrhea should strongly suggest the coexistence of syphilis.

The Herxheimer reaction is assumed to be the result of the liberation of toxic substances in the course of the destruction of the spirochetes by therapeutic agents. The phenomenon, appearing usually within from 3 to 8 hours of the first injection, consists of chills, fever, headache, nausea, edema of or pain in the primary ulcer and surrounding tissues, swelling of or pain in enlarged lymph nodes, appearance of a secondary eruption, or enlargement, brightening,

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and extension of an existing secondary eruption, or of any combination of these signs or symptoms. In the course of treatment of this large group of patients the impression has been gained that patients receiving therapy for primary syphilis of only a few days' duration show febrile reaction less frequently than those whose disease is of longer standing. The most probable explanation for this fact is that the body harbors spirochetes in greater numbers in older infections, the treatment of which will liberate larger quantities of reaction-producing substances and thus produce a more severe response.

The occurrence, then, of a Herxheimer reaction and its degree of intensity or the nonoccurrence of such a reaction in any patient infected with syphilis and gonorrhea may be explained on a basis of (1) when the syphilis was acquired with respect to the gonorrhea and (2) the incubation periods of the two diseases. A patient may have acquired syphilis and be in the incubation period prior to becoming infected with gonorrhea, he may have acquired the two infections simultaneously, or he may have acquired the syphilis subsequently to acquiring gonorrhea but before the institution of treatment for the gonorrhea. The incubation period of gonorrhea may run from 7 to 30 days, or even longer, while that of syphilis may run from 7 days to 4 months. If the incubation period of syphilis is short, and that of gonorrhea long, the patient may be heavily infected by the time the gonorrhea is treated and thus react to the liberation of products of spirochetal destruction. But if the invasion of the host by the T. pallidum is slow, and the incubation period of gonorrhea short, the quantity of toxic material of spirochetal origin liberated by penicillin may not be sufficient to give rise to a reaction.

While only 66 of these 1,000 patients treated for early syphilis gave a history of having been treated for gonorrhea not accompanied by a penile ulcer within 4 months prior to the development of recognized syphilis, it was found that 18 of these 66 patients at the time of the treatment for gonorrhea showed signs and symptoms which may be considered as constituting a Herxheimer reaction and thus an indication of the presence of syphilis in the absence of other clinical evidence of the disease.

In summary, the occurrence of chills or fever accompanying penicillin therapy for gonorrhea not obviously complicated by syphilis is strong presumptive evidence of the coexistence of syphilis. Although there are exceptions to the rule, it appears to be a safe precaution to subject a patient displaying a febrile reaction to penicillin to close scrutiny, clinically and serologically, for a period of 4 months following therapy. Within that period additional evidence of an oncoming syphilis may be expected to develop. (J. VD Information, July '46 - Fromer et al.)

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Q Fever: The American Journal of Hygiene for July 1946 contains eleven papers reporting upon a series of studies of a disease which occurred endemically and epidemically in the Mediterranean Area and sporadically in Panama during the latter part of World War II. This disease has been identified as Q fever, a rickettsial infection originally discovered in Queensland, Australia, in 1935.

The occurrence of Q fever in the Mediterranean Area and in Panama adds two new geographic regions to the known distribution of the disease. Heretofore, Q fever has been recognized under natural conditions chiefly in Australia. Although ticks infected with Rickettsia burneti, the cause of Q fever, have been found in many parts of the United States, only a few naturally occurring infections have been established in this country. The failure to detect serologically more cases of Q fever in the United States in the past may possibly have been due, not to the absence of the disease, but to the use of a weakly reactive strain of the specific Rickettsia as antigen. It appears that Q fever is more widespread than originally thought, and that further investigations are needed to determine the extent of its distribution throughout the world. It is important that a proper antigen be employed, and the use of the highly reactive Italian strain (Henzerling) as an antigen for serological tests may greatly facilitate such studies.

The mode and manner of spread of Q fever in the Mediterranean Area and in Panama have not been determined. While an air-borne spread of the infection is a possibility, spread by an arthropod vector is also to be suspected in this disease because of its occurrence in other rickettsial diseases. Evidence from Australia indicates that the tick (Haemaphysalis humorosa) and the bandicoot (Isodon torosus) may constitute an important vector and host reservoir, respectively, in that country. Similar evidence is lacking for either a vector or host reservoir in the new endemic regions. The discovery of mites in the straw of a barn-loft, around which one outbreak centered, provides a lead for further investigation.

The occurrence of pulmonary infiltration as a clinical feature of naturally acquired Q fever is emphasized by the findings reported upon in the studies presented. Hornibrook and Nelson pointed out the pulmonary infiltration aspect of the disease in patients infected during a laboratory outbreak at the National Institute of Health. Symptoms and signs of such involvement elicited during physical examination may be minimal or absent, but pulmonary infiltration can be expected to be demonstrable by roentgenogram of the chest. This feature of the disease was not noted in the Australian cases although 4 of the original 9 cases reported had cough or rales in the chest. (Robbins et al.)

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Abstracts of Reports on Research Projects:

X-542
(Av-282-p)
27 May '46

Study of the Effectiveness of Glasses, Sun, N-1, Contract
No. NXsX 66844

The object of this study was to determine the effectiveness of sunglasses, N-1, Contract No. NXsX 66844 in eliminating the cumulative effects on light threshold of intense exposure to sunlight.

Thirty-two subjects were given training on the Hecht-Schlaer Adaptometer for one week and, on the basis of average threshold, divided into three groups. For the next three weeks, all subjects were tested each morning and then transported to Onslow Beach. During this period, one group had maximum protection from the sun by wearing dark-adaptor goggles; another group was issued sunglasses, N-1; and the third group had no protection for their eyes. Average thresholds for each group were computed and compared.

No significant differences were found between any of the groups, and it is impossible to evaluate the effectiveness of sunglasses, N-1, from the present results. This may be attributed to two factors:

- (1) Great variability of threshold determinations on untrained subjects, a fact which tends to obscure minute changes in threshold.
- (2) Lack of concrete evidence for the existence of a cumulative effect of exposure. (Med. Field Res. Lab., Camp Lejeune, N. C. - Ross et al.)

X-686
(Gen. 146)
2 April '46

Tolerability Studies on New Antimalarial Drugs

Four experimental drugs, (SN-6911, 7618, 8137, and 11437), quinacrine, and a lactose placebo were administered on a voluntary basis to 1,127 Marine recruits in suppressive doses for six weeks for the purpose of determining the relative acceptability of each to a military population. Subjects were interviewed each week and their complaints analyzed.

All of the experimental compounds were found to be superior to quinacrine from the point of view of acceptability to a military population. Of the four experimental drugs,

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X-686
(Cont.)

SN-6911 was significantly less tolerable than any of the others, while SN-7618 was as acceptable as the lactose placebo. (Med. Field Res. Lab., Camp Lejeune, N.C. - Hering et al.)

X-426
Report No. 3
22 May '46

An Evaluation of the Relative Safety of Intravenously Administered Antimalarial Drugs.

Two new antimalarial drugs, SN-10,492 and SN-10,751, were administered by intravenous infusion to unanesthetized dogs, and the effects of various doses were carefully observed. An attempt was made to increase the maximum tolerated doses by the simultaneous administration of pentobarbital.

The maximum tolerated doses of these compounds were compared with those of drugs of comparable antimalarial potency which had been previously studied.

SN-10,492 and SN-10,751 exhibit margins of safety for intravenous use approximately equivalent to that of SN-7618 (chloroquine). These drugs do not have as high a margin of safety for intravenous use as SN-6911 and, therefore, intravenous trial in man is not warranted. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Stormont)

Note: Those interested in seeing copies of the complete reports may address their request to the Research Division, BuMed.

Opinions or conclusions contained in these reports are those of the author. They are not to be construed as necessarily reflecting the views or the endorsement of the Navy Department. Reference may be made to those reports marked "Not Restricted" in the same way as to published articles, noting authors, title, source, date, project number, and report number.

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(Not Restricted)

Public Health Foreign Reports:

<u>Disease</u>	<u>Location</u>	<u>Date</u>	<u>No. of Cases</u>
Cholera	China, Amoy	June 1-18, '46	1 (fatal)
	Hong Kong	June 15-29, '46	128 (48 fatal)
	Kiangsu Prov.	June 1-20, '46	96 (65 suspected, 12 fatal)
	Kwangsi, Prov.	May 11-31, '46	189 (27 fatal)
	Kwangtung Prov., Canton	June 1-20, '46	697 (247 fatal)
	Shanghai	June 21-30, '46	488 (29 fatal)

(Not Restricted)

Public Health Foreign Reports (Cont.)

<u>Disease</u>	<u>Location</u>	<u>Date</u>	<u>No. of Cases</u>
Cholera	Indochina (French),		
	Cambodia	June '46	162
	Pnom-Penh	June 22-29, '46	2
	Japan, Formosa,		
	Keelung	April '46	15 (5 fatal)
	Tainan	April '46	33 (23 fatal)
	Malay States (Un-		
	federated)		
	Kelantan	June 30-July 13, '46	106 (84 fatal)
	Trengganu	June 30-July 6, '46	3 (1 fatal)
	Manchuria	July 20, '46 (date rep.)	312 (fatal)
Plague	Canada, Nova Scotia,		
	Cape Breton Is.,		
	Sydney	July 9, '46 (date rep.)	1 (imported, suspected)
	China, Chekiang Prov.	June 1-10, '46	17 (3 fatal)
	Fukien Prov.	May 11-June 10, '46	386 (213 fatal)
	Kwangtung Prov.	May 21-31, '46	16 (10 fatal)
	Ecuador, Chim-		
	borazo Prov.,		
	Avinag	June '46	2 (1 fatal)
	Egypt, Matariya	June 30-July 6, '46	2
	Indochina (French),		
	Cochinchina	June '46	2
Smallpox	Indochina (French),		
	Cambodia	June '46	467
Typhus Fever	Ecuador	June '46	133 (8 fatal)
	Morocco (French)	June 21-30, '46	126
Yellow Fever	Ivory Coast, Bobo		
	Diulasso	July 17, '46	1 (suspected)
	Nigeria, Oyo Prov.	May 18-25, '46	1 (fatal)
	Oshogbo	July 1, '46	2 (suspected - 1 fatal)

(Pub. Health Reps., Aug. 2 and 9, '46)

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(Not Restricted)

Training in Epidemiology Available: Requests from regular Navy medical officers are desired for training in epidemiology in a three-months' course given at the Naval Medical School, Bethesda, Maryland. It is contemplated that the next class will start about 1 January 1947. After training in this specialty, officers will be placed in some very desirable billets, including epidemiology and research units located in Cairo, Egypt, NMRI Bethesda, Md., Dublin, Ga., Guam, M.I., University of California, and research in medical science projects sponsored by the Navy in civilian institutions. Also, certain well qualified officers will be employed in teaching assignments in various Naval medical activities.

Although previous training is not necessary, previous experience in basic sciences is desirable. Medical officers of the rank of commander and below are eligible. (Professional Div., BuMed)

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(Not Restricted)

Note for Naval Reserve Dental Officers Concerning Eligibility for Transfer to U.S. Navy:

Those on Duty with the Navy. Naval Reserve dental officers may submit applications for transfer to the regular Navy immediately upon reporting for active duty. It should be understood that the final action on such applications cannot be taken until the applicant has completed six months of active duty.

Those on Duty with the Army. Naval Reserve dental officers assigned to duty with the Army are eligible to submit applications for transfer from USNR status to USN status. Credit is given for active duty in the Army in establishing the six months' active duty period required before action can be taken on such applications.

Naval Reserve dental officers are again reminded of the deadline of 15 September 1946 set by ALNAV 416 for submission of applications for transfer to the U. S. Navy. This deadline does not apply to officers with less than one year's active duty as of 15 September. (Dental Div., BuMed)

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(Not Restricted)

Dental Activities Authorized to Perform Acrylic Ocular Prosthesis: The completion of acrylic ocular prosthesis for the majority of war casualties requiring this type of treatment has permitted a decrease in the number of activities authorized to perform this specialty.

RESTRICTED

(Not Restricted)

At the present time only the following activities are authorized to construct acrylic ocular prostheses: Naval Dental School, National Naval Medical Center, Bethesda; U. S. Naval Hospital, Philadelphia, and the U. S. Naval Hospital, San Diego.

Below is a table showing the number of cases of acrylic ocular prosthesis completed during the month of January 1946 compared with the number completed in July 1946:

	January 1946	July 1946
NavDentScol Bethesda	22	12
NavHosp Philadelphia	9	11
NavHosp San Diego	2	8
NavHosp Oakland	2	-
NavHosp Seattle	6	-
NavHosp Great Lakes	8	-
NavHosp St. Albans	4	-
	<u>53</u>	<u>31</u>

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(Not Restricted)

Note for Dental Officers Re Applications for Assignment to the Armed Forces Staff College: Attention of all dental officers is invited to ALNAV 410 (page 33 of Bumed News Letter of 16 Aug 1946) relative to applications for assignment to the Armed Forces Staff College for the course beginning 1 February 1947. (Dental Div., BuMed)

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(Not Restricted)

Announcement of More Opportunities for Civilian Training Now Available and Report on Status of Medical Officer Training in Civilian Institutions: The Bureau of Medicine and Surgery wishes to announce the progress made in the furtherance of its Graduate Training Program. It has required considerable effort to obtain courses, fellowships, and residencies which are acceptable to the Professional Division. It is believed that this report will provide a partial answer for the medical officer who desires information as to the extent and possibilities of receiving training in the Navy.

In the previous issue of the Bumed News Letter, a report was made on the progress of residency-type training in Naval hospitals in accordance with "The Outline of Graduate Training in Naval Hospitals" as published 1 May 1946. A report is now made on the third part of the "Outline," namely, "Special and Continuation Courses."

(Not Restricted)

The list included in this report shows the number of places and the civilian institutions in which the various types of training as shown have thus far been made available. All categories of the scheduled training which have a starting date in 1946 will be repeated in the year 1947. No places for training which starts in the calendar year 1947 have been filled as of this date. It is pointed out that in most instances where the type of course shown is a residency, it will be necessary for the medical officer to live in the institution.

The Bureau hopes to effect additional arrangements during the ensuing months until a total of 200 places in civilian institutions are available for training.

Requests are desired at this time for training which starts on and after 1 January 1947. As a general rule selection of candidates is made 2-3 months prior to the starting dates.

Eligibility for this training is changed to the extent that now applicants may be officers of any rank with the necessary background and experience who have completed, or soon will complete, one tour of duty outside the continental U.S. (sea or shore, or combination of both) and soon will be eligible for, or are now on, duty in the continental U.S. In the case of those now on shore duty in the U.S. and who otherwise qualify, their present status must be such that they would normally be due to remain ashore for at least another 12 months. Applications for training of six months or longer in civilian institutions must include a signed agreement not to resign during the course and to remain in the Navy three years after completion of the course. An appropriate endorsement by the commanding officer is required. Applications may be submitted by dispatch. Requests should be submitted in accordance with the article on page 23 of the Bumed News Letter dated 24 May 1946 and should be accompanied by (or followed by in case of dispatch request) 2 recent photographs of approximately 2 x 3 inches in size. (Professional Div., BuMed)

TRAINING OF 6 MONTHS' OR LONGER DURATION

<u>No. of Places</u>	<u>Institution</u>	<u>Specialty</u>	<u>Type of Training</u>	<u>Duration</u>	<u>Starts</u>
		<u>ANESTHESIA</u>			
3	Mayo Clinic		Course	6 Months	10-1-46
		<u>BRONCHOSCOPY</u>			
1	Jefferson Medical College (Continuous)		Fellowship	8 Months	10-14-46

(Not Restricted)

TRAINING OF 6 MONTHS' OR LONGER DURATION (Cont.)

<u>No. of Places</u>	<u>Institution</u>	<u>Specialty</u>	<u>Type of Training</u>	<u>Duration</u>	<u>Starts</u>
<u>CARDIOLOGY</u>					
1	Massachusetts General Hospital		Fellowship	12 Months	3-1-46
<u>DERMATOLOGY & SYPHILOLOGY</u>					
1	Northwestern University (Continuous)		Course	9 Months	2-18-46
2	New York Medical School, NYC		Course	11 Months	10-1-46
1	Harvard University		Course	11 Months	10-1-46
<u>INTERNAL MEDICINE</u>					
1	Northwestern University		Course	9 Months	10-1-46
1	State Univ. of Iowa		Fellowship	12 Months	10-1-46
3	Univ. of Pennsylvania		Course	8 Months	10-1-46
5	Cornell Univ. Med. School		Course	6 Months	10-1-46
1	Mayo Clinic		Fellowship	12 Months	10-1-46
1	Strong Memorial Hospital		Residency	12 Months	7-1-47
<u>NEUROSURGERY</u>					
1	Marquette University		Preceptorship	12 Months	9-1-46
1	Massachusetts General Hospital		Preceptorship	12 Months	7-1-46
1	Lahey Clinic		Fellowship	12 Months	10-1-46
<u>OBSTETRICS & GYNECOLOGY</u>					
1	Univ. of Pennsylvania		Course	8 Months	10-7-46
<u>ONCOLOGY</u>					
1	Memorial Hospital, NYC		Residency	12 Months	6-15-46
<u>OPHTHALMOLOGY</u>					
8	Univ. of Pennsylvania		Course	8 Months	10-1-46
2	Washington Univ. of St. Louis		Fellowship	12 Months	10-1-47
1	Illinois Eye & Ear Infirmary		Residency	12 Months	7-1-47

(Not Restricted)

TRAINING OF 6 MONTHS' OR LONGER DURATION (Cont.)

<u>No. of Places</u>	<u>Institution</u>	<u>Specialty</u>	<u>Type of Course</u>	<u>Duration</u>	<u>Starts</u>
<u>ORTHOPEDICS</u>					
1	James W. Riley Mem. Hospital Indiana Univ. (Children's Ortho.)	Residency		12 Months	1-1-47
2	Duke University (Children's Ortho.)	Residency		12 Months	1-1-47
1	Lahey Clinic	Fellowship		12 Months	10-1-46
1	Washington Univ. of St. Louis	Fellowship		12 Months	10-1-46
<u>OTOLARYNGOLOGY</u>					
1	New York Hospital, NYC (Continuous)	Fellowship		12 Months	2-1-46
1	University of Illinois	Course		8 Months	9-30-46
1	Northwestern Univ.	Course		9 Months	10-1-46
1	Univ. of Pennsylvania	Course		8 Months	10-7-46
1	Washington Univ. of St. Louis	Fellowship		8 Months	9-16-46
<u>PATHOLOGY</u>					
2	Indiana Univ. School of Medicine	Residency		12 Months	10-1-46
1	Henry Ford Hospital	Fellowship		12 Months	7-1-47
1	Mayo Clinic	Course		12 Months	10-1-46
1	Wayne Univ. Med. College	Fellowship		12 Months	10-1-46
1	Univ. of Michigan	Fellowship		12 Months	10-1-46
<u>PHYSICAL MEDICINE</u>					
2	Mayo Clinic	Fellowship		12 Months	10-1-46
<u>PSYCHIATRY</u>					
1	Payne Whitney Psych. Div., NYC	Fellowship		12 Months	6-1-46
1	Jefferson Hosp., Phila., Pa.	Fellowship		12 Months	4-4-46
1	N.Y. Neurological Inst.	Fellowship		12 Months	4-1-46
1	N.Y. Psych. Inst., NYC	Fellowship		12 Months	4-1-46
1	Langley Porter Clinic, Univ. Cal.	Fellowship		12 Months	4-1-46
1	Bellevue Hospital, NYC	Fellowship		12 Months	4-1-46
1	Univ. of Louisville	Fellowship		12 Months	4-1-46
2	Penn. Hosp. for Mental & Nervous Diseases, Phila. Pa. (Flt. Surgs)	Fellowship		9 Months	8-1-46
1	Penn. Hosp. for Mental & Nervous Diseases, Phila. Pa.	Fellowship		12 Months	5-1-46
1	Phil. Child Guidance Clinic	Fellowship		10 Months	10-1-46

(Not Restricted)

TRAINING OF 6 MONTHS' OR LONGER DURATION (Cont.)

<u>No. of Places</u>	<u>Institution</u>	<u>Specialty</u>	<u>Type of Training</u>	<u>Duration</u>	<u>Starts</u>
<u>PUBLIC HEALTH</u>					
2	Harvard University		Course	8 Months	9-1-46
6	Johns Hopkins University		Course	8 Months	9-30-46

Leading to the Degree of Master of Public Health

RADIOLOGY

1	Johns Hopkins University (Continuous)	Fellowship	12 Months	7-1-46
1	Washington Univ. of St. Louis	Fellowship	12 Months	6-1-46
1	New York Hospital, NYC	Fellowship	12 Months	7-1-46
1	Lahey Clinic	Fellowship	12 Months	10-1-46
1	Harper Hospital, Detroit, Mich.	Residency	12 Months	1-1-47
1	State Univ. of Iowa	Residency	12 Months	7-1-47
1	Henry Ford Hospital, Detroit	Residency	12 Months	10-1-46
1	Indiana Univ. School of Medicine	Residency	12 Months	1-1-47

SURGERY

1	Cleveland Clinic	Fellowship	12 Months	10-1-46
1	Northwestern University (Continuous)	Fellowship	12 Months	1-24-46
1	*Philadelphia General Hospital	Residency	12 Months	9-1-46
1	Univ. of Pennsylvania (Continuous)	Preceptorship	12 Months	11-21-46
2	Univ. of Pennsylvania	Course	8 Months	10-7-46
2	State Univ. of Iowa	Fellowship	12 Months	10-1-46
2	Lahey Clinic	Fellowship	12 Months	10-1-46
2	University of Illinois	Fellowship	12 Months	10-1-46
2	University of Illinois (Basic)	Course	9 Months	1-1-47

*Open only to officers who interned at this hospital

UROLOGY

1	University of Michigan	Residency	12 Months	1-1-47
1	James B. Brady Foundation (Continuous)	Fellowship	12 Months	6-25-46
1	Washington Univ. of St. Louis	Fellowship	12 Months	10-1-46
1	State Univ. of Iowa	Fellowship	12 Months	5-1-47

(Not Restricted)

TRAINING OF 6 MONTHS' OR LONGER DURATION (Cont.)

<u>No. of Places</u>	<u>Institution</u>	<u>Specialty</u>	<u>Type of Training</u>	<u>Duration</u>	<u>Starts</u>
		<u>LAW</u>			
3	George Washington Univ.		Course	36 Months	9-23-46
	1 Officer will be started in Law each September for (3) three years.				

TRAINING OF LESS THAN 6 MONTHS' DURATION

ACCELERATION (Research)

1	Univ. of Southern California		Course	2 Months	any time
		<u>ANATOMY</u>			
20	Daniel Baugh Inst., Jefferson Medical College		Course	20 Weeks	10-15-46

BRONCHO-ESOPHAGOGY

2	University of Illinois		Course	2 Weeks	any time
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CAUDAL ANALGESIA

2	University of Tennessee		Course	2 Weeks	any time
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ENDAUURAL SURGERY

1	Lempert Otological Inst., NYC		Course	6 Weeks	any time
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OPHTHALMOLOGY

1	Northwestern University		Course	4 Months	1-16-46
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OTOLARYNGOLOGY (Surgical Anatomy)

2	Jefferson Medical College		Course	10 Weeks	10-15-46
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SUMMARY: Long Courses - 6 Months or more - 103
 Short Courses - 2 Weeks to 6 Months - 29
 132

(Not Restricted)

ADDITIONAL OPPORTUNITIES FOR TRAINING AVAILABLE IN 1947

<u>No. of Places</u>	<u>Institution</u>	<u>Specialty</u>	<u>Type of Training</u>	<u>Duration</u>	<u>Starts</u>
<u>DERMATOLOGY</u>					
1	Indiana Univ. School of Med.		Residency	12 Months	7-1-47
<u>INTERNAL MEDICINE</u>					
5	Cornell Univ. Medical School		Course	6 Months	4-1-47
6	Univ. of Pennsylvania		Course	8 Months	10-1-47
1	Indiana Univ. School of Med.		Residency	12 Months	7-1-47
<u>GENERAL SURGERY</u>					
6	Univ. of Pennsylvania		Course	8 Months	10-1-47
<u>OPHTHALMOLOGY</u>					
3	Univ. of Pennsylvania		Course	8 Months	10-1-47
1	Indiana University		Residency	12 Months	7-1-47
<u>OTOLARYNGOLOGY</u>					
3	Univ. of Pennsylvania		Course	8 Months	10-1-47
1	Indiana University		Residency	12 Months	7-1-47
<u>OBSTETRICS</u>					
1	Univ. of Pennsylvania		Course	8 Months	10-1-47
<u>RADIOLOGY</u>					
3	Univ. of Pennsylvania		Course	8 Months	10-1-47

(Professional Div., BuMed)

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(Not Restricted)

Re the Approval of Residency-Type Training in Naval Hospitals: It is anticipated that many queries will be directed to the Medical-Officers-in-Command and Senior Medical Officers by medical officers who are under training or who are interested in residency-type training in Naval hospitals after they have perused the August 17, 1946 issue of the Journal of the American Medical Association. It will be noted that some of the major specialties at the larger U. S. Naval Hospitals are not listed in this issue of the Journal as approved for residency-type training. This has been occasioned by the fact that certain American Specialty Boards have not as yet begun action on the recommendations made by the Council on Medical Education of the American Medical Association. Explanation of these facts is made in order to avoid misapprehension on the part of those medical officers who are now, or expect later to be, under this type of training.

Additional approvals for residency training in Naval hospitals will be published in the next issue of the J.A.M.A., listing approved residencies and fellowships. It is anticipated that the next Educational Number will be published in about six months.

The Bureau of Medicine and Surgery will notify each hospital promptly of additional approvals of residency-type training. (Professional Div., BuMed)

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(Not Restricted)

Deadline Date for Reserve Nurses to Submit Application for Transfer to USN: See copy of ALNAV 441 on page 32 of this issue.

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(Not Restricted)

Note for Nurses Transferring to USN: See Circular Letter 46-124 on page 35 of this issue.

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(Not Restricted)

Information Concerning Salt-Poor Human Serum Albumin: See Circular Letter 46-122 on page 32 of this issue.

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(Not Restricted)

Fellowships Made Available by the Arctic Institute of North America: The Arctic Institute of North America announces two fellowships of up to \$2,000 each (Canadian currency) for scientific work in the Canadian Arctic or Subarctic during 1947. The fellowships are open to anyone who has demonstrated his ability to carry out research work of superior quality in some field of science.

(Not Restricted)

Applications must be received by 1 November 1946. Fellowships will be awarded on the recommendation of the Board of Governors of the Arctic Institute and will be announced by February 1947. Application forms may be obtained from: The Arctic Institute of North America, 805 Sherbrooke Street West, Montreal, Canada. (Science, Aug. 16, '46)

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(Not Restricted)

New York Academy of Medicine Graduate Fortnight: The Nineteenth Graduate Fortnight of the New York Academy of Medicine will be held during the dates October 7 and 18, 1946, on the subject of Tumors. The Fortnight will include evening lectures, morning panel discussions, scientific exhibits, and demonstrations at the Academy, and afternoon hospital clinics at leading hospitals of New York City.

Physicians who are not Fellows of the Academy may secure registration by sending name and address, accompanied by check for five dollars, to the Secretary of the Graduate Fortnight Committee, 2 East 103 Street, New York 29, New York.

Medical officers of the Army, Navy, and United States Public Health Service, on active duty, will be admitted to all sessions without registration fee. (Ann. Int. Med. - May 1946)

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(Not Restricted)

Instructions for Use of Dental Mechanical Amalgamator: The recent addition of the mechanical amalgamator to the Catalog of Navy Material, Dental Equipment and Supplies, has resulted in many inquiries regarding its use. This instrument is a valuable aid in that it provides an ideal plastic amalgam both rapidly and efficiently. Briefly, the following instructions should be closely adhered to:

1. Keep capsule and pestle clean. Hardened amalgam in the capsule is difficult to remove. Scratches on the inner surfaces of capsule invite perpetual trouble. Hardened amalgam may be removed from the metal capsule by carefully heating the capsule, but the best precaution is to remove the adhering amalgam before it sets.
2. Use scales in accordance with instructions furnished with the amalgamator. Proportion the silver alloy and mercury as directed by the instructions supplied in the alloy package. The freshly mixed amalgam should appear relatively "sloppy," and should be formed into a rope for segmentation.

(Not Restricted)

3. Triturate until the "clicking" noise in the capsule appears to have stopped. No specific time for mixing can be given as alloys vary, and the rotary speeds of amalgamator motors differ. General speaking, the mixing time should be from 8 to 12 seconds.

4. Mulling may be effectively performed by removing the pestle and returning the capsule and amalgam to the amalgamator. Only one second of vibration is required to accomplish mulling.

5. Because the time factor has been so reduced in preparing the amalgam alloy, multiple mixes should be used for compound restorations. This will prevent the possibility of disturbing the set during the working time. The size of any mix is limited by the size of the capsule. Dental officers are cautioned against attempting to prepare excessively large quantities of amalgam at one time as amalgamation may be incomplete. (Dental Div., BuMed and Naval Dental School, Bethesda, Md.)

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(Not Restricted)

Meeting of Reserve Consultants Board to the Bureau of Medicine and

Surgery: At a recent meeting of the Reserve Consultants Board to the Bureau of Medicine and Surgery, Vice Admiral Ross T. McIntire, (MC), USN, Surgeon General of the Navy, expressed his deep appreciation for the assistance given by the members of the Board in establishing the residency-training program as part of the Bureau's post-war planning.

Rear Admiral Winchell M. Craig, (MC), USNR, on inactive duty, now Professor of Neurosurgery at the University of Minnesota and Neurological Surgeon and Neurosurgical consultant at the Mayo Clinic, presided over the meeting. Others in attendance at the meeting were: Commodore Alphonse McMahon, Captain F. J. Braceland, Captain E. N. Broyles, Captain Arthur M. Culler, Captain Richard C. Eley, Captain Howard K. Gray, Captain Paul Greeley, Captain Clark Johnson, Captain Wendell Scott, Captain Marion Sulzberger, Commander J. Roscoe Miller, Commander Charles Geschickter (all officers of the Naval Medical Reserve Corps and, with the exception of Commodore McMahon, now on inactive duty), and Dr. M. G. Westmoreland, representing the Council on Medical Education and Hospitals of the American Medical Association. In addition to Vice Admiral Ross T. McIntire, the following officers represented the Bureau of Medicine and Surgery: Rear Admiral John Harper, (MC), USN; Commodore M. D. Willcutts, (MC), USN; Captain M. V. Brown, (MC), USN (Ret.); Captain F. L. McDaniel, (MC), USN; and Captain L. R. Newhouser, (MC), USN. The Office of Naval Research, Navy Department, was represented by Captain A. J. Vorwald, (MC), USNR.

The Board considered matters of policy as well as ways and means of expanding the specialty courses offered and of otherwise furthering the training

(Not Restricted)

program which is designed to afford Naval medical officers an opportunity to train in medical specialties and to qualify for American Board certification and fellowship in one of the American Colleges in addition to increasing their professional proficiency and in improving the standards of medical practice.

Two additional specialists, Dr. Andrew C. Ivy and Dr. Donald E. Hale, will be invited to become members of the Reserve Consultants Board. Dr. Ivy, now Professor of Physiology at Northwestern University, was formerly the Scientific Director of the Naval Medical Research Institute at Bethesda, Maryland. Dr. Hale, who served as a Captain in the Naval Medical Corps during World War II, is now associated with the Cleveland Clinic, Cleveland, Ohio.

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(Not Restricted)

Examinations for Appointments as Assistant Surgeon and as Acting Assistant Surgeon: During the period from 7 - 11 October 1946, inclusive, Boards of Medical Examiners and Supervisory Naval Examining Boards at 30 Naval hospitals throughout the country will conduct physical and professional examinations for the selection of candidates for appointments as Assistant Surgeon and as Acting Assistant Surgeon with the rank of Lieutenant (j.g.).

To qualify, candidates must be citizens of the United States, between the ages of 21 and 32, must be graduates of approved medical schools, and must meet the physical requirements for appointment.

Graduates of approved medical schools in the United States or Canada who have completed internship in accredited hospitals are eligible to take the examination for Assistant Surgeon. Those selected, following confirmation by the Senate, will be appointed and receive orders assigning them to a Naval medical facility for active duty.

All students enrolled in approved medical schools who will have completed the third year of their medical course prior to the date of the examinations are eligible to take the examinations for Acting Assistant Surgeon. Upon receipt by the Navy Department of certification that the candidate has satisfactorily completed his medical education, those selected will be appointed Acting Assistant Surgeons and issued active duty orders to Naval hospitals for intern training.

Application forms and additional information may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C., or from Naval Officer Procurement offices.

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Circular Letter 46-117

9 August 1946

(Not Restricted)

To: All Ships and Stations

Subj: Annual Syphilis Report, NavMed-A (Rev. 8-45)

Ref: (a) BuMed ltr. BuMed-Y-avr, A3-3/EN10(A), of 4 Oct 1945 (N.D. Bull. Item 45-1432).
 (b) BuMed Cir. Ltr. 46-91, of 11 Jun 1946, (N.D. Bull. Item 46-1256).
 (c) MMD, par. 35D4.1.
 (d) BuMed Cir. Ltr. 46-101, (N.D. Bull. Item 46-1381).

1. In many instances subject report is being submitted quarterly on outdated form NavMed-A. This report was changed from quarterly to annual by ref (a), and form NavMed-A was revised. NavMed-A (Rev. 8-45) may be procured in accordance with ref (d).

2. Instructions for the preparation of NavMed-A (Rev. 8-45) are printed on the form and in ref (c). In the preparation of this form attention is directed particularly to the following:

- (a) The breakdown of syphilis cases into "negro" and "all others" (Item A).
- (b) Bismarsen is an arsenical and not a heavy metal (Item B).
- (c) Size of dose is not required when indicating number of doses of arsenicals administered (Item B).
- (d) A completed course of penicillin for purposes of this report is 6 or 8 million units (See ref (b)). The size of the course shall be indicated.

3. Reports submitted improperly will be returned with a copy of this letter.

--BuMed. Ross T. McIntire.

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Circular Letter 46-118

12 August 1946

(Not Restricted)

To: District Medical Officers (Except 10, 14, 15 and 17).
 Staff Medical Officers: PRNC; SRNC; CNATraCom; MarBaks, Quantico, Va.; MarBaks, Parris Island, S.C.; ComServSubordComLANT; ComServPAC.

Via: Commandants and Commanding General, Marine Barracks, Quantico, Va., and Parris Island, S.C.

Subj: General Instructions Relative to Submission of Weekly Combined Report of Enlisted Hospital Corps Personnel (Form NavMed 590) and Instructions Relative to Selection of Hospital Corps Enlisted Ratings for Transfer.

Note: Because of the long list of references, the revised sample copy of NavMed 590, and its length, this letter in its entirety is not reprinted here.

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Circular Letter 46-119

12 August 1946

(Not Restricted)

To: District Dental Officers (Except 10, 14, 15, and 17).
Staff Dental Officers: PRNC; SRNC; CNATraCom; MarBaks, Quantico, Va.; MarBaks, Parris Island, S.C.; ComServSubordComLANT; ComServPAC.

Via: Commandants and Commanding General, Marine Barracks, Quantico, Va., and Parris Island, S.C.

Subj: General Instructions Relative to Submission of Weekly Combined Report of Enlisted Hospital Corps Personnel (Dental Technicians) (Form NavMed 590 DENTAL) and Instructions Relative to Selection of Hospital Corps Enlisted Ratings (Dental Technicians) for Transfer.

Note: Because of the long list of references, the revised sample copy of NavMed 590, and its length, this letter in its entirety is not reprinted here.

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Circular Letter 46-120

14 August 1946

(Not Restricted)

To: All Ships and Stations

Subj: Submission of NavMed-HC-3 and NavMed-HC-4 to BuMed. Re - Hospital Corpsmen (Dental Technicians).

Refs: (a) Paragraph 517 and 518, Manual of the Medical Department, U.S. Navy. (Rev. 1945).
(b) AlNav 343.
(c) SecNavLtr., Op21D-je Serial 3369P21 of 27 June 1946.

1. Attention is invited to references (b) and (c).

2. Reference (a) is modified by references (b) and (c). In accordance therewith the dental departments of ships and stations are responsible for the forwarding of NavMed-HC-3 and NavMed-HC-4 in the case of dental personnel who are assigned to the dental department of the ship or station in accordance with reference (c).

--BuMed. Ross T. McIntire

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Circular Letter 46-121 (See page 36.)

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To: All Ships and Stations 26 July 1946 (Not Restricted)

Subj: Compressed Air for Use in Dental Operating Rooms and Prosthetic Laboratories.

Ref: (a) BuShips ltr. S37-1 (640-250), EN28/A2-11, of 10 May 1946; N. D. Bul. of 15 May 1946, 46-1036.

Note: See the Navy Department Semimonthly Bulletin of 31 July 1946, page 115 for this letter which modifies paragraphs 3(c) and 3(e) of reference (a) which was printed in its entirety in the Bumed News Letter of 5 July, page 28.

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(Not Restricted)

Disestablishment of Naval Medical Activity: As published in the Navy Department Semimonthly Bulletin of 31 July 1946, the following Naval Medical activity was disestablished as of the date shown:

<u>Name</u>	<u>Address</u>	<u>Date of Disestablishment</u>
Fleet Hospital No. 116	Okinawa	30 June 1946

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ALNAV 441

8 August 1946

(Not Restricted)

Subj: Deadline Date for Reserve Nurses to Submit Application for Transfer to USN

1. This Alnav establishes a deadline for the submission of applications for transfer of officers of the Navy Nurse Corps Reserve to the regular Navy Nurse Corps under the provisions of Alnav 279-45 and BuMed Circular Letter 46-67. All eligible officers on active duty including terminal leave and all eligible officers on inactive duty who desire to request transfer to the regular Navy Nurse Corps must submit their applications on or before 1 October 1946. Commanding officers, commandants of naval districts and river commands, and other officers authorized to receive applications from individuals will not accept applications after 1 October 1946. Applications received on or before 1 October 1946 will be processed and forwarded to the Bureau of Medicine and Surgery in accordance with Alnavs 271-45 and 279-45, and BuMed Circular Letter 46-67.

2. Since this Alnav applies to nurses on terminal leave and inactive duty as well as to officers on active duty, all commandants of naval districts and river commands are requested to insure that the contents of this Alnav receive wide publicity, including press and radio, within their respective commands.

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Circular Letter 46-122

15 August 1946

(Not Restricted)

To: All Ships and Stations

Subj: Normal Human Serum Albumin, Salt-Poor.

1. ACTION

Each bottle contains 25 grams of albumin obtained from pooled normal human plasma and 1.0 gram of d,1-acetyl tryptophane in 100 c.c. of solution. This is the osmotic equivalent of approximately 500 c.c. of citrated plasma. The acetyl tryptophane improves the stability of the solution and is a derivative of an amino acid in which human serum albumin is deficient. The solution contains no preservative as it has been sterilized by filtration.

When injected intravenously, 100 c.c. of 25 per cent albumin draw approximately 350 c.c. of additional fluid into the circulation within 15 minutes except in the presence of marked dehydration. This extra fluid reduces hemoconcentration and blood viscosity. If hemorrhage has occurred, an anemia may follow

(Not Restricted)

hemodilution. This should be treated with whole blood. When the circulating blood volume has been depleted, the hemodilution following albumin persists many hours. In individuals with a normal blood volume it usually lasts only a few hours.

In contrast to the original Standard Army and Navy Package of Normal Human Serum Albumin bearing expiration dates from November 1945 to April 1950, and containing 0.6 to 1.0 Gm. per cent sodium, Normal Human Serum Albumin, Salt-Poor, contains only 0.3 Gm. per cent sodium. For comparison, the amounts of sodium in osmotically equivalent volumes of solution are as follows: citrated plasma (500 c.c.), 2.1 Gm.; circulating plasma (450 c.c.), 1.6 Gm.; original standard albumin (100 c.c.), 0.6 to 1.0 Gm.; salt-poor albumin (100 c.c.), 0.3 Gm. This low sodium content is of value when large amounts of Normal Human Serum Albumin are administered to hypoproteine-mic patients with edema and poor kidney function, as the accumulation of sodium ion in the extracellular fluid is minimized. Normal Human Serum Albumin may be given in conjunction with or combined with other parenteral fluids - whole blood, plasma, saline, glucose, or sodium lactate. The addition of two bottles of albumin to 1,000 c.c. of normal saline or 5 per cent glucose gives a solution approximately isotonic and isomotic with citrated plasma.

2. INDICATIONS AND DOSAGE

Shock - Albumin is indicated in the emergency treatment of shock due to trauma, hemorrhage, operation, and infection, or in the treatment of injuries of such severity that shock, although not immediately present, is likely to ensue. An initial dose of one to two bottles can be followed in 15 to 30 minutes by a third bottle if the response is inadequate. Administration of larger quantities should be supplemented with or replaced by the use of whole blood to combat the relative anemia which would follow the use of three bottles of albumin (equivalent to 1500 c.c. plasma). The quick response to blood pressure which may follow the rapid administration of concentrated albumin necessitates careful observation of the injured patient to detect bleeding points which failed to bleed at a lower blood pressure. Because the bottle of concentrated albumin can be administered in 3 to 10 minutes, it is preferable for the earliest treatment of shock. If dehydration is present, the administration of other fluids by any available route is desirable, either with albumin (two bottles of albumin per liter solution) or after albumin. Even in marked dehydration, however, concentrated albumin is not harmful. It is merely less effective.

Burns - An initial dose of one to two bottles should be followed by 5 per cent solution of albumin (two bottles per liter) in normal saline or in 5 per cent glucose in such quantities as are needed to prevent marked hemoconcentration, and to maintain appropriate electrolyte balance.

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(Not Restricted)

Hypoproteinemia with or without edema - Two to three bottles daily over a period of days or weeks may be required to reduce edema and to raise the serum protein values to normal. Since these patients have approximately normal blood volumes, doses of more than one bottle of albumin should not be given faster than 100 c.c. in 30 to 45 minutes to avoid circulatory embarrassment. If slower administration is desired, in cases with hypertension or cardiac failure, 200 c.c. of albumin solution may be mixed with 300 c.c. of 10 per cent glucose solution in water and administered by continuous drip at a rate of 10 Gm. of albumin (100 c.c.) per hour. Although diuresis may occur soon after albumin administered has been instituted best results are obtained if albumin is continued until normal serum protein and serum albumin levels are regained.

3. Because salt-poor albumin contains no preservative it should not be used if the solution is cloudy. Sterility is maintained by careful handling in cold rooms throughout the processing, Seitz filtration to remove bacteria, and heat treatment for 10 hours at 60° C. to kill viruses.

4. Satisfactory methods for processing and preserving salt-poor albumin were not developed until late in the war. As a result only about 1/20 of the Navy's supply of albumin was obtained in this form. It is necessary then to restrict the use of salt-poor albumin to treatment of those cases of hypoproteinemia with poor kidney function in which the extra sodium of regular albumin would throw an additional burden on these damaged organs. Requisitions for salt-poor albumin should be accompanied by a letter setting forth the reasons for requesting this type of albumin.

--BuMed. Ross T. McIntire

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Circular Letter 46-123

15 August 1946

(Not Restricted)

To: District Medical Officers
Via: Comdts, NDS (continental U.S.)

Subj: Liquid Plasma; Preparation of in Naval Districts.

Ref: (a) BuMed CirLtr. No. 45-139, dtd, 4 Jun 1945.
(b) BuMed CirLtr. No. 46-82, dtd, 14 May 1946.

1. The following naval activities are hereby released from the responsibility of supplying liquid plasma to other activities in their respective Naval Districts as established by Reference (a):

(Not Restricted)

First Naval District
Third Naval District
Fourth Naval District
Fifth Naval District
Sixth Naval District
Seventh Naval District
Eighth Naval District
Ninth Naval District
Eleventh Naval District
Twelfth Naval District
Thirteenth Naval District
Potomac and Severn River
Naval Commands

USNH, Chelsea, Mass.
USNH, St. Albans, L.I., N.Y.
USNH, Philadelphia, Pa.
USNH, Portsmouth, Va.
USNH, Charleston, S.C.
USNH, Key West, Fla.
USNH, Norman, Oklahoma
USNH, Great Lakes, Ill.
USNH, San Diego, Calif.
USNH, Oakland, Calif.
USNH, Bremerton, Wash.
U.S. Naval Medical School,
NNMC, Bethesda, Md.

2. All Naval Medical Activities will now procure dried plasma directly from the Naval Medical Supply Depot as needed at any time according to their respective requirements and as a regular Supply Catalog Item No. 1-607-104 Plasma, Normal Human Dried (500 c.c.).

3. Nothing in this letter shall be construed as forbidding the preparation of liquid plasma by any naval activity, or its distribution to other naval activities provided that (a) the technic of preparation at all times conforms to the minimum requirements of the National Institute of Health for the preparation of human plasma and that (b) no funds are used to purchase blood for the single purpose of plasma preparations.

4. The Blood and Plasma Department at the Naval Medical School, National Naval Medical Center, Bethesda, Maryland, will be maintained as a pilot plant for the purpose of providing instruction in blood and plasma bank operations, as a source of consultation on questions involving blood and plasma and to provide a more efficient operation of the National Naval Medical Center Blood Bank. Further, they will coordinate research activities with those of the Naval Medical Research Institute when practicable.

- -BuMed. Ross T. McIntire

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Circular Letter 46-124

15 August 1946

(Not Restricted)

To: All Ships and Stations

Subj: Appointment in the Nurse Corps, U. S. Navy of Reserve Nurse Corps Officers.

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(Not Restricted)

Ref: (a) BuMed CirLtr 46-113, 30 Jul 1946, (Navy Dept. Bull. item 46-1587).

Encl: (A) (HW) Sample forms of Acceptance and Oath of Office.

(B) (HW) " " " Acknowledgment of Temporary Appointment.

1. The assignment of permanent dates of rank as outlined in enclosure (A) of reference (a) has led to some uncertainty on the part of individuals relative to their lineal position, the practice is being discontinued and the dates previously published shall be disregarded. Initial permanent appointments issued to transferring officers henceforth will not include a date of rank, pending legislation as stated in AlNav 365.

2. Enclosures (A) and (B) outline sample forms to replace the samples contained in enclosure (B) of reference. --BuMed. Ross T. McIntire

Note: Copies of enclosures not reprinted here.

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Circular Letter 46-125

16 August 1946

(Not Restricted)

To: Medical Officers in Command, All Continental Naval Hospitals.

Subj: Nurse Corps Separatees - Forwarding of copy of final orders to the Bureau of Medicine and Surgery.

This letter from the Chief of BuMed directs that a copy of final orders of all Nurse Corps separatees be forwarded to BuMed.

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Circular Letter 46-121

15 August 1946

(Not Restricted)

To: All Ships and Stations

Subj: NavMed Forms, requisitioning of

Ref: (a) BuMed CirLtr 46-101, 19 Jun 1946, (N.D. Bull., Item 46-1381).

1. Requisitions submitted in accordance with reference (a) shall be prepared on form NavGen 47. A column for the NavMed number is provided on NavGen 47. On all future requests the NavMed number shall be entered in this column.

2. With reference to paragraph 2 of reference (a), the Potomac and Severn River Naval Commands shall forward requests for NavMed forms to the East Coast Publications Distribution Center, Cheatham Annex, Williamsburg, Virginia, until further notice.

--BuMed. W. J. C. Agnew

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